

**RENSSELAER POLYTECHNIC INSTITUTE  
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**RPI  
FOREIGN TRIP REPORT  
WPEC20180514**

**DATE:** June 1, 2018

**SUBJECT:** Report of Foreign Travel to Paris France – Yaron Danon, RPI.

**TO:** Angela Chambers, Manager US DOE NCSP, Office of the Chief of Defense Nuclear Safety, NA-511.

**FROM:** Yaron Danon, Rensselaer Polytechnic Institute, Troy, NY 12180

**MEETING TITLE:** 30th Meeting Working Party on International Nuclear Data Evaluation Cooperation

**MEETING LOCATION:** OECD Paris, France

**MEETING DATES:** May 14-18, 2018

**ATTENDEES ON BEHALF OF NCSP:** Yaron Danon, Emily Liu

**MEETING BENEFITS TO NCSP:**

The meeting occurred during the week of May 14-18, 2018. During that week there were several parallel sessions with interest to NCSP that we attended:

<b>Session</b>	<b>Date</b>	<b>Participant/Presenter</b>
SG-45 (VANDAL)	5/14	Y. Danon
SG-44 (covariance data)	5/14	Y. Danon
SG-42 (thermal scattering)	5/15-5/16	Emily Li, Y. Danon
SG-C (high priority list)	5/16	Y. Danon
WPEC	5/17-5/18	Y. Danon

All sessions included topics in which NCSP supported research performed at RPI. Recent measurements performed at RPI were discussed in some sessions:

- A presentation on the RPI thermal scattering measurements and evaluations was given by Liu during the SG-42 meeting.
- A presentation by Danon during the WPEC meeting provided an update on recent US data measurements (as reported to CSEWG).

The meeting provides an opportunity to collaborate with other ND communities such as JENDL and JEFF. The collaboration allows better planning of NCSP related ND experiments. In some cases, this meeting enables access to experimental and evaluated data obtained elsewhere.

#### **MEETING PURPOSE:**

The purpose of WPEC and adjacent subgroup meetings is to foster international collaboration and coordination between the different nuclear data evaluation programs around the world. That includes the ENDF, JEFF, JENDL and BROND, CENDL projects and other invited delegates.

#### **SITES VISITED:**

OECD Paris, France.

#### **ABSTRACT:**

The travelers (Danon and Liu) participated in the WPEC meeting in OECD Paris, France. Danon is an official member of the US (ENDF) delegation representing CSEWG measurement committed. Danon presented a report on US measurement activity during FY17-18 mostly based on reports provided during the November 2017 CSEWG meeting. He is currently the only US member of subgroup C (high priority list), and a member of subgroups 42 (thermal scattering), and 44 (covariance data). Dr. Liu presented the RPI measurements and evaluation effort during SG-42 meeting; she attended all SG-42 sessions. Due to subgroup schedule conflicts, Danon participated in only some of the SG-42 sessions.

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## **REPORT OF FOREIGN TRAVEL**

**Yaron Danon  
OECD Paris, France  
May 14-18, 2018**

### **PURPOSE OF TRAVEL**

The purpose of the travel is to participate in the WPEC meeting as an official member of the US delegation and to present a report on US experimental ND work during FY17-18, and to participate in subgroups C, 42 and 44.

### **REPORT**

#### **Subgroup C**

Danon is a member of Subgroup-C the high priority nuclear data list (HPRL). This list prioritizes needs for nuclear data measurements and evaluation. In Europe, the list is used to justify new measurements. The NDAG priority list is the NCSP equivalent of subgroup C. During the meeting, the all 39 high priority approved requests were reviewed and the status of the request was updated. Most of the request include are for measurements and evaluations that are relevant to NCSP and if will be performed will improve ND and calculations based on it. Recent request include Pu-239 nubar in the low energy region and Cr-50,53(n, $\gamma$ ) which are also of interest for NCSP as outline in the 5 year plan. The list is maintained by NEA and is available online at: [www.oecd-nea.org/dbdata/hprl](http://www.oecd-nea.org/dbdata/hprl) (click the search list button and then again the search button to see all the list). The U-233 capture cross section that is currently debated in NDAG already appears on HRPL for the keV region. Measurements are ongoing in nTOF but is sometimes difficult to get access to their experimental data.

#### **SG-42 thermal scattering**

During SG-42 contributions from the US (with support from NCSP and NR) were given by NCSU and RPI. Again, this year there was much discussion on water this time by the IRSN group. They obtained beam time to perform measurements of water at different temperatures at the ARCS spectrometer at SNS (ORNL). CEA discussed thermal scattering from UO<sub>2</sub> and possible effect on resonance scattering. They are planning to perform additional measurement to validate the models. This was this third and final year of this subgroup and report is expected within a year.

#### **WPEC**

A report to WPEC was given on Thursday and included reports on experimental activity in different US laboratories including:

1. Los Alamos National Laboratory
2. Oak Ridge National laboratory
3. Lawrence Berkeley National Laboratory and UB Berkley
4. Triangle Universities Nuclear Laboratory (TUNL) and Duke University

## 5. Rensselaer Polytechnic Institute

The information in the US reports is mostly from the presentation given during the CSEWG in November 2017. Reports from each evaluation project were then presented focusing on the latest experimental and evaluation efforts. WPEC also reviews and approves new subgroups. There was much discussion on a subgroup proposal to continue the very successful CIELO project SG-40 that terminated last year. All the evaluations performed during this project were adopted to ENDF-8.0. The continuation proposal was submitted by LANL but was not accepted as is WPEC requested to have a more focused goal and deliverables.

### **WPEC Meeting participants**

Mark CHADWICK	ENDF/SG 40 (excused)
Yaron DANON	ENDF
Mike DUNN	ENDF/SG 28 (excused)
Ulrich FISCHER	JEFF
Zhigang GE	CENDL
Hideo HARADA	JENDL/SG 41 (excused)
Mike HERMAN	ENDF (excused)
Anatoly IGNATYUK	BROND/ROSFOND (excused)
Nobuyuki IWAMOTO	JENDL
Osamu IWAMOTO	JENDL
Robert JACQMIN	JEFF/SG 27
Arjan KONING	IAEA/TENDL
Tatsuya KATABUCHI	JENDL (excused)
Atsushi KIMURA	JENDL
Robert MILLS	SG 37/JEFF (excused)
Arjan PLOMPEN	JEFF/WPEC Chair
Alejandro SONZSOGNI	ENDF
Kenji YOKOYAMA	JENDL

### **Subgroup coordinators**

Caleb MATTOON	SG 38/ENDF
Giuseppe PALMIOTTI	SG 39/SG 46/ENDF
Ayman HAWARI	SG 42/ENDF
Fausto MALVAGI	SG 43/JEFF
Vladimir SOBES	SG 44/ENDF
Morgan WHITE	SG 45/ENDF
Emmeric DUPONT	SG-C/EG-HPRL/JEFF
Dave BROWN	SG-B/EG-GNDS/ENDF

### **Invitees**

Ivan-Alexander KODELI	JSI
Franco MICHEL-SENDIS	NEA
Xichao RUAN	CENDL
Haicheng WU	CENDL

### **Observers**

David HEINRICHS	LLNL
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Luiz Carlos LEAL	IRSN
Catherine PERCHER	LLNL
Jean-Christophe SUBLET	IAEA

**Secretariat**

Michael FLEMING	NEA
Tatiana IVANOVA	NEA/Head of Nuclear Science (excused)

**Itinerary**

5/05/18 - 5/06/18	Travel from Albany, NY to Paris France
5/06/18 - 5/06/18	Travel from Paris to Vienna (not supported by NCSP)
5/06/18 – 5/13/18	International Nuclear Data Evaluation Network (INDEN) meeting in Vienna (not supported by NCSP)
5/13/18 - 5/13/18	Travel from Vienna to Paris (not supported by NCSP)
5/14/18 - 5/14/18	SG-45 (VANDAL), Danon attended morning session
5/14/18 - 5/14/18	SG-44 (Covariance), Danon attended the afternoon meeting
5/15/18 - 5/15/18	SG-42 (TSL data), Liu and danon attended
5/16/18 - 5/16/18	SG-42 (TSL data), Liu attended all day, danon only morning session
5/16/18 - 5/16/18	SG-C (HPRL), Danon attended
5/17/18 - 5/18/18	WPEC Meeting in NEA, Danon attended both days
5/19/18 - 5/19/18	Travel from Paris France to Albany, NY

## **DISTRIBUTION**

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